

Application Serial No.: 10/692,269

REMARKS

Claims 1 – 18, 20, and 21 are in the application. Claims 1, 3 – 5, 12, 18, 20, and 21 were previously presented; claim 19 is canceled; and claims 2, 6 – 11, and 13 – 17 remain unchanged from the original versions thereof. Claims 1, 20, and 21 are the independent claims herein.

No new matter has been added to the application as a result of the amendments submitted herewith.

Reconsideration and further examination are respectfully requested.

Claim Rejections – 35 USC § 103

Claims 1, 10, 12, 13, 15, 16, 18, 20, and 21 were rejected under 35 U.S.C. 103(a) as being unpatentable over Rudnick et al. U.S. Publication No. 2002/0159418, in view of Spinar et al. U.S. Publication No. 2002/0080816, and Ho U.S. Publication No. 2004/0196850. This rejection is traversed.

Applicant notes that claim 1 relates to a method for providing a delay guarantee for each of a plurality of client devices associated with an access point including classifying each of the plurality of client devices into one of a plurality of potential client device types based on, at least, a measurement of current and previous traffic loads for each of the plurality of client devices, and a determination of whether the client device is critical; determining a desired traffic load for the plurality of client devices; and allocating shaper intervals to each of the plurality of client devices based on the client device type classification and the desired traffic load wherein the classifying, determining, and allocating are performed by the access point.

Applicant emphasizes that the claimed method specifically and explicitly states that the classifying of each of the plurality of client devices, the determining of a desired

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traffic load for the plurality of client devices, and the allocating of shaper intervals to each of the plurality of client devices based on the client device classification and the desired traffic load is solely performed by the access point. The Specification provides extensive support for the access point itself performing the classifying, determining, and the allocating at paragraphs [0039] – [0046], [0055], [0074], [0094], [0119]. One of the benefits of the present invention is that the access point can adjust the inter-frame interval for each of the client devices based on considerations of per client device channel variations, uplink traffic, and performance impacting features of IEEE 802.11 compliant devices without having to use special software on the client devices or modify the IEEE 802.11 standard.” (See Specification, paragraph [0023]) By performing the claimed classifying, determining, and the allocating by the access point, the claimed invention avoids a need to software (or otherwise) augment the client or station side device. Again, the access point provides a delay guarantee for each of the plurality of client devices associated with the access point by performing the claimed classifying, determining, and the allocating.

The Rudnick disclosed method and system propose a polling scheme that requires stations to support the polling protocol. For example, if a station does not understand the polling protocol (e.g., the standard IEEE 802.11 b/g/a station), then it cannot be categorized as a high-priority station and therefore gets no guaranteed service. Thus, the polled stations must be configured to support the polling of Rudnick. Additionally, Rudnick disclose that the “method of the invention provides a differentiated-services type QoS, requiring minimal changes to the 802.11 specification”. (See Rudnick, paragraph [0021]) Therefore, Rudnick requires the stations to understand the disclosed polling protocol and requires modification of the 802.11 specification, whether minimal or otherwise.

The Office Action states that Rudnick discloses, “a method for providing a delay guarantee for each of a plurality of client devices associated with an access point” by citing and relying on paragraphs 16, 28, 23, and 24. Applicant notes however that Rudnick makes no such statements or disclosures regarding providing a *delay guarantee*. In fact, Rudnick discloses a method of providing differentiated-services type

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Quality of Service (QoS) (See Rudnick, paragraph [0021]) based on giving a preference to high-priority QoS stations in a polling list subset and polling the subset high-priority stations during a contention free period. (Rudnick, paragraph [0016]). Applicant also notes that Differentiated Services is an IETF standardization aims at using lightweight and simple QoS mechanisms without providing service guarantees [See IETF DiffServ site: <http://www.ietf.org/html.charters/OLD/diffserv-charter.html>]. Rudnick clarifies that the method of the invention therein is based on implementing a multi-tier prioritization of transmission opportunities based on the identity of the sending or receiving STA (i.e., station). Rudnick admits that the disclosed method is a rudimentary form of QoS because the control of transmission opportunities is used as a proxy for bandwidth because, according to Rudnick, admission-controlled allocation of bandwidth is not directly controlled by Rudnick's method. (Rudnick, paragraph 29) That is, Rudnick's method is not based on providing a delay guarantee. Rudnick instead provides CFPs for polling of the subset polling list only slightly longer than the time needed to service the high-priority STAs. (Rudnick, paragraph 33) Rudnick is silent regarding delays and delay guarantees.

Thus, it is clear that Rudnick neither states nor discloses a method for providing a delay guarantee for each of a plurality of client devices associated with an access point.

The Office Action cites and relies upon Spinar for disclosing the claimed aspect of classifying each of the plurality of client devices into one of a plurality of potential client device types based on, at least, a measurement of current and previous traffic loads for each of the plurality of client devices. The Office Action states that the classifying of each of the plurality of client devices into one of a plurality of potential client device types based on at least a measurement of current and previous traffic loads is known based on the disclosure of Spinar. However, Spinar does not disclose a classifying each of the plurality of client devices into a plurality of potential client device types wherein the clarifying is performed by an access point.

Instead, Spinar discloses individual or multicast polling. Whether the polling of CPEs is on an individual basis or a multicasting basis, there is no disclosure of classifying the client devices into a plurality of classes. Spinar also discloses a CPE transmitting a bandwidth request and the base station receiving the request for bandwidth from the CPE. The CPE and the base station work together to perform the bandwidth allocation according to Spinar since there is a request for bandwidth and a response to the request. (See Spinar [0063] wherein the required request for bandwidth allocation is discussed) Thus, Spinar does not disclose that which is claimed by Applicant since each of the independent claims clearly states that the classifying each of the plurality of client devices into one of a plurality of potential client device types based on, at least, a measurement of current and previous traffic loads for each of the plurality of client devices is "performed by the access point".

Accordingly, Spinar fails to disclose or suggest the claimed classifying each of the plurality of client devices into one of a plurality of potential client device types based on, at least, a measurement of current and previous traffic loads for each of the plurality of client device wherein the classifying is performed by the access point.

The Office Action cites and relies upon Ho for disclosing the claimed aspect of allocating shaper intervals to each of the plurality of client devices based on the client device type classification. Regarding the cited and relied upon Ho, the Office Action states that Applicant's Specification at paragraph 48 suggests that any device admitted with a declared bandwidth in the WLAN is critical. This is simply not true. Instead, Applicant, as a matter of fact, states, "[A] client device may be specified or designated as critical as part of admission control, network configuration or setup, control parameter, administrator designation, etc. In some embodiments, a client device may be a client device as illustrated in FIG. 1 that appears in a client critical table with both enable and accepted flags set (i.e., its declared bandwidth has passed admission control)." (See paragraph 48) Thus, Applicant specifically says a device may be critical under certain conditions.

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Reading the Specification as a whole, even as parsed by the Office, actually discloses that some devices may be critical and some devices are not critical since the disclosed method, system, and apparatus accounts for and considers "five different types of client devices: critical compliant (CC), critical non-compliant (CNC), non-critical satisfied (NCS), non-critical regulated (NCR), and non-critical non-responsive (NCNR)." (Specification, paragraph 47) Furthermore, paragraphs 49 – 53 provide the criteria for the five different types of devices in the present application. Further understanding of the five different types of devices may be had by referring to FIG. 4.

Accordingly, the Office Action's argued statements regarding Ho and that which is claimed by Applicant in relation to same are without merit since the Office Action's characterization of the claims and Specification are mistaken.

Given the failings of each of the cited and relied upon Rudnick, Spinar, and Ho references, Applicant respectfully submits that the combination of Rudnick, Spinar, and Ho fails to render claims 1, 20, and 21 obvious under 35 USC 103(a) since the combination does not disclose or suggest that which is claimed by Applicant.

Accordingly, Applicant requests the reconsideration and withdrawal of the rejection of claims 1, 20, and 21 under 35 USC 103(a). Applicant further request the allowance of claims 10, 12, 13, 15, 16, 18, 20, and 21 for at least depending from an allowable base claim.

Claims 2 – 5 were rejected under 35 U.S.C. 103(a) as being unpatentable over Rudnick '418 in view of Ho '850 and Spinar '816 as applied to claim 1 above, and further in view of Gu et al. (Daqing Gu and Jinyun Zhang, "QoS Enhancements in IEEE802.11 Wireless Local Area Network", IEEE, June 2003, Pages 120-124). This rejection is traversed.

Inasmuch as Applicant has demonstrated that the combination of Rudnick, Ho, and Spinar does not disclose or suggest that for which it is cited and relied upon for disclosing and the present rejection relies on the same rationale, Applicant submits that the combination of Rudnick, Ho, Spinar, and Gu also does not render claims 2 – 5

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obvious. That is, Gu does not correct or otherwise compensate for the weaknesses in the disclosure of Rudnick, Ho, and Spinar.

Accordingly, Applicant submits the combination of Rudnick, Ho, Spinar, and Gu does not render claims 2 – 5 obvious under 35 USC 103(a) and requests the reconsideration and withdrawal of the claims, as well as the allowance of same.

Claims 6 and 17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Rudnick '418 in view of Spinar '816 and Ho '850 as applied to claim 1 above, and further in view of Awater et al. U.S. Publication No. 2007/0109980. This rejection is traversed.

Inasmuch as Applicant has demonstrated that the combination of Rudnick, Ho, and Spinar does not disclose or suggest that for which it is cited and relied upon for disclosing and the present rejection relies on the same rationale, Applicant submits that the combination of Rudnick, Ho, Spinar, and Awater also does not render claims 6 and 17 obvious. That is, Awater does not correct or otherwise compensate for the weaknesses in the disclosure of Rudnick, Ho, and Spinar.

Accordingly, Applicant submits the combination of Rudnick, Ho, Spinar, and Awater does not render claims 6 and 17 obvious under 35 USC 103(a) and requests the reconsideration and withdrawal of the claims, as well as the allowance of same.

Claims 7 – 9, 11, and 14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Rudnick '418 in view of Spinar '816 and Ho '850 as applied to claim 1 above, and further in view of Grilo et al. (Antonio Grilo, Mario Marcedo, and Mario Nunes, "A Scheduling Algorithm For QoS Support in IEEE802.1E Networks", IEEE, June 23, Pages 36-43). This rejection is traversed.

Inasmuch as Applicant has demonstrated that the combination of Rudnick, Ho, and Spinar does not disclose or suggest that for which it is cited and relied upon for disclosing and the present rejection relies on the same rationale, Applicant submits that the combination of Rudnick, Ho, Spinar, and Grilo also does not render claims 7 – 9,

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11, and 14 obvious. That is, Grilo does not correct or otherwise compensate for the weaknesses in the disclosure of Rudnick, Ho, and Spinar.

Accordingly, Applicant submits the combination of Rudnick, Ho, Spinar, and Grilo does not render claims 7 – 9, 11, and 14 obvious under 35 USC 103(a) and requests the reconsideration and withdrawal of the claims, as well as the allowance of same.

CONCLUSION

Accordingly, Applicant respectfully requests allowance of the pending claim.

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Respectfully submitted,



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